



ReachNXT™ 100-8t User Guide

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This chapter describes the Extreme Networks® ReachNXT™ 100-8t ExtremeXOS® port extender. It includes the following sections:

- [About the ReachNXT 100-8t Port Extender on page 5](#)
- [ExtremeXOS Interoperability on page 6](#)
- [Power over Ethernet \(PoE\) Support on page 6](#)
- [Monitoring the ReachNXT 100-8t on page 7](#)
- [Upgrading Firmware on the ReachNXT 100-8t on page 7](#)
- [ReachNXT 100-8t Front Panel on page 7](#)
- [ReachNXT 100-8t Rear Panel on page 9](#)

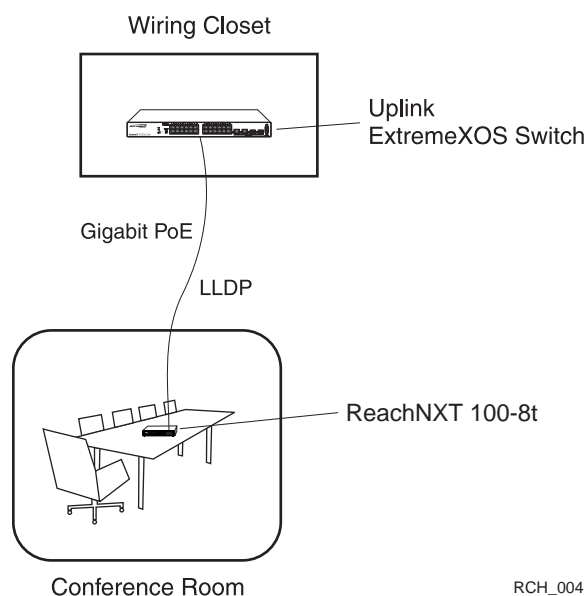
About the ReachNXT 100-8t Port Extender

The ReachNXT 100-8t port extender is an 8-port 10/100 switch with Gigabit uplink capability. It features eight 10/100BASE-T ports for user access and one combination Gigabit Ethernet uplink port, which connects to a switch running ExtremeXOS software.

The ReachNXT 100-8t does not run ExtremeXOS software, but instead is controlled by the ExtremeXOS switch to which it is connected. The ReachNXT 100-8t operates as an extension of the ExtremeXOS switch, providing additional access ports, aggregating network traffic from those ports, and sending the traffic to the uplinked switch.

A typical application for the ReachNXT 100-8t is in a conference room, as illustrated in [Figure 2](#).

Figure 1: Typical ReachNXT 100-8t Installation



RCH_004

Users can connect their laptops to ports on the ReachNXT 100-8t to gain access to the network. The ReachNXT 100-8t aggregates traffic from the connected users and sends the traffic to an uplinked ExtremeXOS switch located elsewhere (for example, in a wiring closet).

The ReachNXT 100-8t communicates with the uplinked switch using Link Layer Discovery Protocol (LLDP). The ReachNXT 100-8t can be powered either from an AC outlet, or from inline power supplied by the uplinked switch over the 100/1000BASE-T connection.

ExtremeXOS Interoperability

To function, the ReachNXT 100-8t port extender *must* be connected to an ExtremeXOS switch. The ReachNXT 100-8t only operates when it detects an ExtremeXOS switch connected to the uplink port through Link Layer Discovery Protocol (LLDP). LLDP must be enabled on the ExtremeXOS switch to which the ReachNXT 100-8t is connected.

The ReachNXT 100-8t disables its user ports if no ExtremeXOS switch is detected or if the uplink is down. The user ports are re-enabled when the uplink port is up, and an ExtremeXOS switch is detected.

[Table 1](#) lists the ExtremeXOS versions that support the ReachNXT 100-8t. The uplinked switch must be running a supported ExtremeXOS version in order to establish connectivity with the ReachNXT 100-8t.

Table 1: Supported ExtremeXOS Versions for Uplinked Switch Connected to ReachNXT 100-8t

ExtremeXOS Version	Support for ReachNXT 100-8t
ExtremeXOS 11.2	Minimum ExtremeXOS version required to operate a ReachNXT 100-8t (includes LLDP support)
ExtremeXOS 12.1	Minimum ExtremeXOS version required to use MAC authentication if the ReachNXT 100-8t is connected to a NetLogin port. Use the configure netlogin ports allow egress-traffic broadcast (or all_cast) command.
ExtremeXOS 12.2	Minimum ExtremeXOS version required for ExtremeXOS-based firmware upgrade from Summit family or BlackDiamond 8800 series switches

Power over Ethernet (PoE) Support

The ReachNXT 100-8t can be powered either by AC power or by the uplinked ExtremeXOS switch using Power over Ethernet (PoE). For information about switches and modules that support PoE, refer to the Extreme Networks web site. (In general, model numbers that end in *p* indicated PoE support.)

To power the ReachNXT 100-8t using PoE, connect the 100/1000BASE-T uplink port on the ReachNXT 100-8t (port 9) to a port on the uplinked ExtremeXOS switch, and enable inline power for the port on the uplinked switch.



NOTE

If you are using the SFP uplink port to connect the ReachNXT 100-8t to the uplinked ExtremeXOS switch, you must power the ReachNXT 100-8t using AC power.

Monitoring the ReachNXT 100-8t

When the ReachNXT 100-8t is operational, it is visible in your network either from the uplinked ExtremeXOS switch or using EPICenter network management software. The ReachNXT 100-8t sends LLDP Data Units (LLDPDUs) to the uplinked switch every 30 seconds. The LLDPDUs contain type-length-value elements (TLVs) for Chassis ID, Port ID, TTL, System Name, and System Description.

For troubleshooting, you can use ExtremeXOS CLI commands or SNMP to query the LLDP neighbor database or to determine the PoE status of the ReachNXT 100-8t. See [Chapter 5, “Troubleshooting”](#) for more information.

Upgrading Firmware on the ReachNXT 100-8t

You can upgrade the firmware on the ReachNXT 100-8t either directly from the uplinked ExtremeXOS switch, or from a DHCP/TFTP server on your network. The following firmware upgrade methods are supported:

- **ExtremeXOS switch-based**

An XMOD package containing the updated firmware is installed on the uplinked ExtremeXOS switch. Then the firmware upgrade process is triggered on the ReachNXT 100-8t, causing the contents of the XMOD package to be downloaded to the ReachNXT 100-8t and installed.

This upgrade method requires that the uplinked switch be running ExtremeXOS 12.2 or later.

- **Network-based**

The firmware image is placed on an external DHCP/TFTP server, and the ReachNXT 100-8t connects to the server and downloads the firmware over a VLAN configured for ReachNXT firmware upgrades.

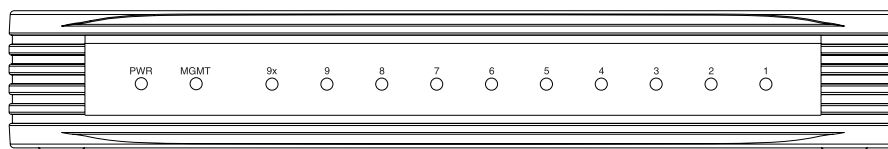
This method does not require a specific ExtremeXOS version.

See [“Upgrading the ReachNXT 100-8t Firmware”](#) on page 15 for firmware upgrade instructions.

ReachNXT 100-8t Front Panel

The front panel of the ReachNXT 100-8t ([Figure 2](#)) has LEDs to indicate port status and operating conditions for the device ([Table 2](#)).

Figure 2: ReachNXT 100-8t Front Panel



Reach-100-8t-front_panel

Table 2: LEDs on the ReachNXT 100-8t

Label or Type	Color/State	Meaning
PWR	Green	Operating on AC power.
	Amber	Operating on PoE power.
	Off	No power.
MGMT	Blinking amber	Firmware upgrade in progress.
	Steady amber	Diagnostics have failed.
	Blinking green	Diagnostics are in progress.
	Steady green	ReachNXT 100-8t is initialized and connected to an ExtremeXOS switch.
	Off	ReachNXT 100-8t is not connected to an ExtremeXOS switch.
Ports 1–8, 9 or 9x	Steady green	Link is OK.
	Blinking green	Port is transmitting packets.
	Off	Link is not present.

ReachNXT 100-8t Rear Panel

The rear panel of the ReachNXT 100-8t ([Figure 3](#)) includes:

- Eight fixed autosensing 10/100BASE-T ports (ports 1–8)
- One combination port (port 9 and port 9x) with an RJ-45 connector for 100/1000BASE-T PoE and a cage for a 1000BASE-X SFP; this port provides an uplink to the ExtremeXOS switch.

The ReachNXT 100-8t is compatible with the following types of Extreme Networks SFP:

- SX
- LX
- 100BASE-BX

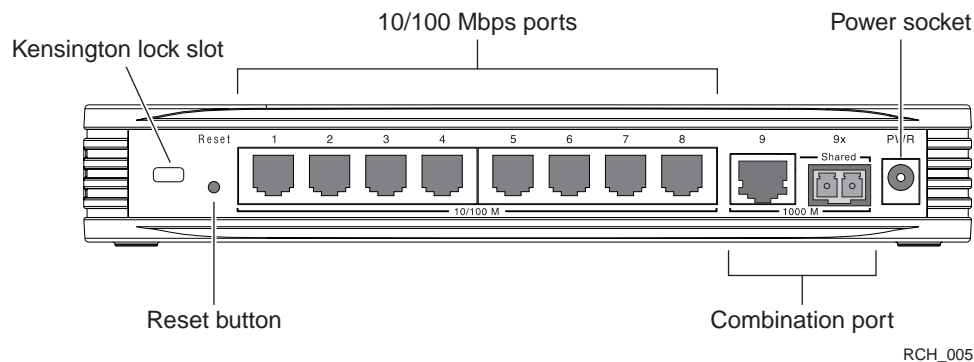
For more information about SFPs, see the *Extreme Networks Pluggable Interface Modules Installation Guide*.

- AC power input socket

The AC power adapter used with the ReachNXT 100-8t is model number IU18-2120125-WP from Leader Electronics, Inc.

- Reset button
- Slot for attaching a Kensington lock

Figure 3: ReachNXT 100-8t Rear Panel



This chapter describes how to install the ReachNXT 100-8t port extender and configure the uplinked ExtremeXOS switch to detect and initialize the port extender. The chapter includes the following sections:

- [Requirements on page 11](#)
- [Installing the ReachNXT 100-8t Hardware on page 11](#)
- [Using the Magnet Mounting Kit on page 12](#)
- [Configuring the ExtremeXOS Switch Software on page 14](#)

Requirements

Before you begin, make sure you have the following:

- ReachNXT 100-8t ExtremeXOS port extender
- ExtremeXOS switch to serve as the uplinked switch. The uplinked ExtremeXOS switch must be running ExtremeXOS version 11.2 or higher.
- Cable to connect the ReachNXT 100-8t to the uplinked ExtremeXOS switch

Depending on your installation, you may also have the following:

- Optional SFP module, if one will be used as the connector to the uplinked ExtremeXOS switch
- Optional AC adapter, if the ReachNXT 100-8t will be powered using AC power
If an SFP module will be used for the uplink connection to the ExtremeXOS switch, you must power the ReachNXT 100-8t using AC power.
- Optional magnet mounting kit, if you will mount the ReachNXT 100-8t in a fixed location
- Kensington lock (not supplied) to secure the ReachNXT 100-8t to its location using its Kensington lock slot

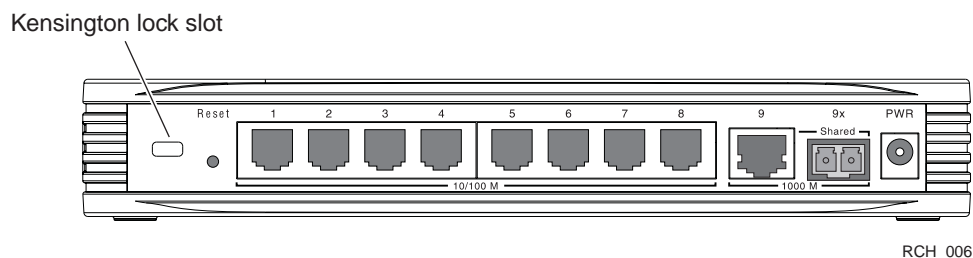
Installing the ReachNXT 100-8t Hardware

To install the ReachNXT 100-8t port extender:

- 1 If an SFP module will be used for the connector to the uplinked ExtremeXOS switch, install the SFP module in the ReachNXT 100-8t (port 9x) according to the instructions supplied with the module.
You must use the AC power adapter to power the ReachNXT 100-8t when using the SFP uplink.
- 2 Set the ReachNXT 100-8t in its installed location, such as on a table in a conference room.
To use the optional magnet mounting kit to install the ReachNXT 100-8t in a fixed location, follow the procedure under [“Using the Magnet Mounting Kit” on page 12](#).
- 3 To secure the ReachNXT 100-8t in its location using a Kensington lock, follow the instructions provided with the Kensington lock.

Insert the locking device into the Kensington lock slot on the ReachNXT 100-8t rear panel (Figure 4), then turn it in the locking direction.

Figure 4: Kensington Lock Slot on the ReachNXT 100-8t Rear Panel



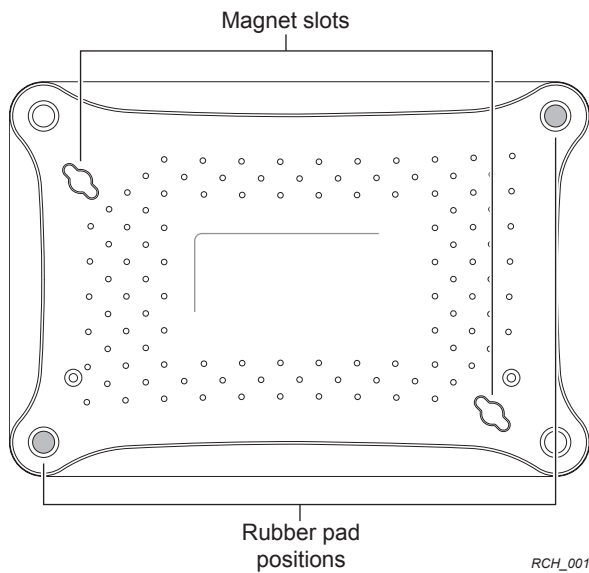
- 4 If the ReachNXT 100-8t will be powered using AC power, connect the unit as follows:
 - a Connect the optional AC adapter to the power socket on the ReachNXT 100-8t (labeled PWR).
 - b Select and attach the appropriate plug style to match the AC outlet to which you are connecting the adapter.
 - c Plug the AC adapter into a wall outlet.

Using the Magnet Mounting Kit

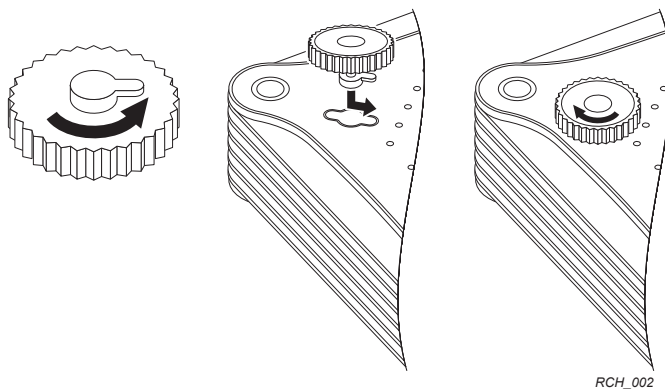
The optional magnet mounting kit allows you to mount the ReachNXT 100-8t in a fixed location using magnets attached to the unit. The magnet mounting kit contains the following items:

- Two magnets
- Two rubber stabilizing pads
- Mounting plate
- Screws and anchors

The magnets are attached to two slots on the bottom of the ReachNXT 100-8t unit (Figure 5). At the other two corners, rubber stabilizing pads prevent the unit from rocking.

Figure 5: Magnet Slots on the ReachNXT 100-8t Bottom Panel

- 1 If the ReachNXT 100-8t will be mounted on a non-metallic surface, attach the mounting plate to the installation location, using the supplied screws and anchors.
- 2 Attach the magnets to the bottom panel of the ReachNXT 100-8t, as follows:
 - a On each magnet, twist the mounting tab counter-clockwise two full turns (see [Figure 6](#)).
 - a Insert the tab on the magnet into a magnet slot on the ReachNXT 100-8t. and slide the magnet in the direction of the narrow end of the tab.
 - b Turn the magnet clockwise until it is finger tight to secure it to the ReachNXT 100-8t.

Figure 6: Attaching Magnets

- 3 After the magnets are installed, attach a rubber stabilizing pad at each corner where a magnet is not installed.
- 4 Set the ReachNXT 100-8t in the installation location, with the magnets touching either the metallic surface or the mounting plate.

To remove the ReachNXT 100-8t from its installed location, **slide** the unit off the plate or other metallic surface. **Do not pull** the unit away from the plate.

Configuring the ExtremeXOS Switch Software

To initialize the ReachNXT 100-8t, perform the following steps on the uplinked ExtremeXOS switch:

- 1 If the ReachNXT 100-8t will be powered using Power over Ethernet (PoE) from the uplinked ExtremeXOS switch, configure PoE on the uplinked switch, using the following commands:

- **enable inline-power** (enabled by default)
- **show inline-power**
- **configure inline-power**

For more information about configuring PoE, refer to the *ExtremeXOS Concepts Guide*.

- 2 Enable LLDP for the port to which the ReachNXT 100-8t will be connected. Use the following command to enable LLDP:

```
enable lldp ports [all | <port_list>]
```

- 3 Connect the ReachNXT 100-8t uplink port (port 9 or 9x) to the uplinked ExtremeXOS switch.

This initializes the ReachNXT 100-8t. When initialization is complete, and the uplinked ExtremeXOS switch is detected, the MGMT LED on the ReachNXT 100-8t lights solid green.

- 4 To verify that the uplinked ExtremeXOS switch detects the ReachNXT 100-8t, enter the following command on the uplinked switch:

```
show lldp neighbors detailed
```

For an LLDP neighbor that is a ReachNXT 100-8t, the command output is similar to the following:

```
# show lldp neighbors detailed
-----
LLDP Port 4:1 detected 1 neighbor
Neighbor: 00:04:96:1F:A8:00/9, age 29 seconds
- Chassis ID type: MAC address (4)
  Chassis ID      : 00:04:96:1F:A8:00
- Port ID type: ifName (5)
  Port ID        : "9"
- Time To Live: 120 seconds
- System Name: "Reach 100-8t 800284-00-01 0840G-00560"
- System Description: "Reach 100-8t 1.6.1.6"
```



NOTE

To function, the ReachNXT 100-8t must be connected to an ExtremeXOS switch. The ReachNXT 100-8t only operates when it detects an ExtremeXOS switch connected to the uplink port via LLDP. LLDP must be enabled on the ExtremeXOS switch to which the ReachNXT 100-8t is connected. The ReachNXT 100-8t disables its user ports if no ExtremeXOS switch is detected, or the uplink is down. The user ports are re-enabled when the uplink port is up, and an ExtremeXOS switch is detected.

3 Upgrading the ReachNXT 100-8t Firmware

This chapter describes the ReachNXT 100-8t firmware upgrade process. It includes the following sections:

- [Background on page 15](#)
- [ExtremeXOS-Based Upgrade on page 15](#)
- [Network-Based Upgrade on page 18](#)

Background

The ReachNXT 100-8t firmware can be upgraded from the uplinked ExtremeXOS switch (ExtremeXOS-based upgrade) or through a server running DHCP (or BootP) and TFTP (network-based upgrade).

The ReachNXT 100-8t supports receiving of the VLAN Name TLV. If this TLV is advertised from the ExtremeXOS switch, the ReachNXT 100-8t uses the VLAN ID to upgrade firmware from a non-ExtremeXOS server in the network.

ExtremeXOS-Based Upgrade

ExtremeXOS version 12.2 includes support for ReachNXT 100-8t firmware upgrades. To upgrade the ReachNXT 100-8t, an optional XMOD package for the ReachNXT 100-8t must be installed on the ExtremeXOS switch. This package includes the current ReachNXT firmware release and version information. The XMOD package name indicates the ExtremeXOS switch platform on which the package can be installed and the ReachNXT 100-8t firmware version that it contains. For example:

- `summitX-12.2.1.1-reach-1.6.1.6.xmod` is for Summit family switches and contains ReachNXT firmware version 1.6.1.6
- `bd8800-12.2.1.1-reach-1.6.1.6.xmod` is for BlackDiamond 8800 series switches and contains ReachNXT firmware version 1.6.1.6

To obtain the XMOD package, go to the Extreme Networks website at <http://www.extremenetworks.com> and click the eSupport link. XMOD packages are listed with the available software downloads.

After the XMOD package is installed, you must trigger the ReachNXT 100-8t to start the upgrade. The upgrade requires that the ReachNXT 100-8t detect or re-detect the ExtremeXOS switch on its uplink port. This can be accomplished using one of the following methods:

- Connect the ReachNXT 100-8t to the ExtremeXOS switch and power it up for the first time.
- Reboot the ReachNXT 100-8t using the **reset inline-power** command on the ExtremeXOS switch.
- Disable and re-enable the port on the ExtremeXOS switch to which the ReachNXT 100-8t is connected.

Following any of these upgrade triggers, when the ReachNXT 100-8t detects that it is connected to the ExtremeXOS switch, it provides its firmware version to the ExtremeXOS switch. If the ExtremeXOS switch has a different firmware version available for download, the ExtremeXOS switch signals the

ReachNXT 100-8t to download the new image. Following a successful download, the ReachNXT 100-8t reboots and runs from the new image. The ReachNXT 100-8t performs a checksum calculation to verify the image download. If the image download fails for any reason, the ReachNXT 100-8t does not use the new image but continues running from the current image.

Before and after the image upgrade, you can verify the current firmware version using the ExtremeXOS switch CLI or through a query from the EPICenter software.

The sections that follow describe the steps to complete the ExtremeXOS-based firmware upgrade for an installed ReachNXT 100-8t. The steps are:

- 1 Verify the connection to the ReachNXT 100-8t and the current firmware version.
- 2 Download and install the ReachNXT XMOD package.
- 3 Trigger the upgrade on the ReachNXT 100-8t.
- 4 Verify the upgrade.

Verifying the ReachNXT 100-8t Connection and Firmware Version

Use the **show lldp neighbors detailed** CLI command to report information about the connected ReachNXT 100-8t and its current firmware version. The firmware version is indicated on the System Description line, following the model name. In the following example, the firmware version 1.4.1.4 is highlighted.

```
# show lldp neighbors detailed
```

```
-----
LLDP Port 25 detected 1 neighbor
Neighbor: 00:04:96:1F:A8:00/9, age 25 seconds
- Chassis ID type: MAC address (4)
  Chassis ID      : 00:04:96:1F:A8:00
- Port ID type: ifName (5)
  Port ID        : "9"
- Time To Live: 120 seconds
- System Name: "Reach 100-8t 800284-00-01 0840G-00560"
- System Description: "Reach 100-8t 1.4.1.4"
```

Downloading and Installing the ReachNXT XMOD Package

Select the correct XMOD package for Summit or BlackDiamond 8800, and download it to the ExtremeXOS switch. For example:

```
X250e-24x.18 # download image 10.66.9.28 summitX-12.2.1.1-reach-1.6.1.6.xmod
Do you want to install image after downloading? (y - yes, n - no, <cr> - cancel) Yes
Downloading to Switch.
Installing to secondary partition!
Installing to Switch.....
Image installed successfully
```


Triggering the Upgrade on the ReachNXT 100-8t

The following are triggers for the ReachNXT upgrade. Because of limits on the number of concurrent TFTP sessions the ExtremeXOS switch can support, Extreme Networks recommends that no more than eight ReachNXT 100-8t units be upgraded at the same time from a single ExtremeXOS switch. If a firmware upgrade fails to complete, the upgrade can be triggered again.

- Initial connection and power-up
If LLDP is enabled on the ExtremeXOS switch, and the ReachNXT XMOD package is installed, the firmware will be upgraded when the ReachNXT 100-8t is connected and initializes.
- Resetting inline power
If the ReachNXT 100-8t has already been connected and is powered by the ExtremeXOS switch, reset it from the ExtremeXOS switch. For example:

```
# reset inline-power ports 10:48
```
- Disabling and enabling the ExtremeXOS switch port
If the ReachNXT 100-8t has already been connected, disable and re-enable the port to trigger the ReachNXT 100-8t to initiate the upgrade. For example:

```
# disable port 25
# enable port 25
```

Verifying the Upgrade

Use the **show lldp neighbors detailed** command to verify that the new firmware version is installed.

```
# show lldp neighbors detailed
-----
LLDP Port 25 detected 1 neighbor
Neighbor: 00:04:96:1F:A8:00/9, age 19 seconds
- Chassis ID type: MAC address (4)
  Chassis ID      : 00:04:96:1F:A8:00
- Port ID type: ifName (5)
  Port ID        : "9"
- Time To Live: 120 seconds
- System Name: "Reach 100-8t 800284-00-01 0840G-00560"
- System Description: "Reach 100-8t 1.6.1.6"
```

Uninstalling the ReachNXT XMOD Package

After the ReachNXT 100-8t firmware is upgraded, the ReachNXT XMOD package is no longer required on the ExtremeXOS switch, unless you plan to connect additional ReachNXT 100-8t units. No upgrade will occur for attached ReachNXT 100-8t units that are running the same firmware version that is contained in the XMOD package.

To uninstall the ReachNXT XMOD package from the ExtremeXOS switch, use the **uninstall** command. For example:

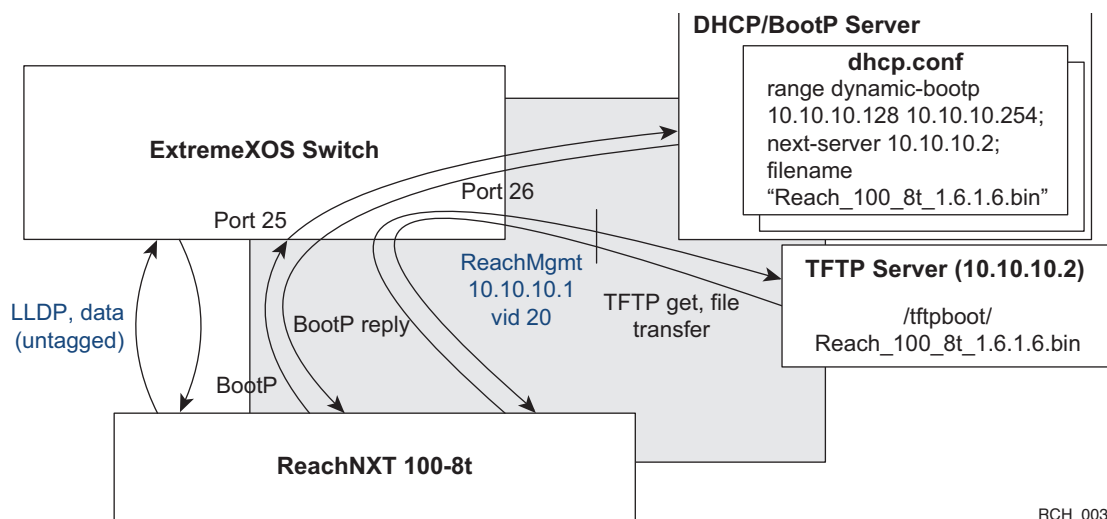
```
# uninstall image summitX-12.2.1.1-reach-1.6.1.6.xmod secondary
Uninstallation of the EXOS module
Do you want to save configuration changes to currently selected configuration
file (primary.cfg)? (y or n) Yes
Saving configuration on master ..... done!
Uninstalling from secondary partition!
Image uninstalled successfully
```

Network-Based Upgrade

An alternate method of upgrading the ReachNXT 100-8t uses an external DHCP/BootP and TFTP server. This method may be more flexible for larger-scale deployments, since the firmware image can be served from a single server. This method is illustrated in [Figure 7](#).

The network-based upgrade relies on existing capabilities in the ExtremeXOS switch to connect ReachNXT 100-8t units to an external server over a VLAN configured for this purpose. The VLAN to use for this is conveyed to the ReachNXT 100-8t in the LLDP VLAN Name TLV. If the ReachNXT 100-8t receives this TLV, it sends a BootP request on that VLAN, receives a BootP reply, and performs a TFTP GET action to obtain the new firmware image file over the configured VLAN. If the server is not on the same VLAN, the ExtremeEXOS BootP Relay capability can be used to re-direct BootP messages to the server.

Figure 7: ReachNXT Network-Based Upgrade



The sections that follow describe the steps to complete the network-based firmware upgrade for an installed ReachNXT 100-8t. The steps are:

- 1 Verify the connection to the ReachNXT 100-8t and current firmware version.
- 2 Create and configure VLANs for the ReachNXT upgrade.
- 3 Configure the DHCP/BootP Server.
- 4 Trigger the upgrade on the ReachNXT 100-8t.
- 5 Verify the upgrade.

Verifying the ReachNXT 100-8t Connection and Firmware Version

Use the **show lldp neighbors detailed** command to report information about the connected ReachNXT 100-8t and its current firmware version. The firmware version is indicated on the `System Description` line, following the model name. In the following example, the firmware version 1.4.1.4 is highlighted.

```
X250e-24x.17 # show lldp neighbors detailed
-----
LLDP Port 25 detected 1 neighbor
Neighbor: 00:04:96:1F:A8:00/9, age 25 seconds
- Chassis ID type: MAC address (4)
  Chassis ID      : 00:04:96:1F:A8:00
- Port ID type: ifName (5)
  Port ID        : "9"
- Time To Live: 120 seconds
- System Name: "Reach 100-8t 800284-00-01 0840G-00560"
- System Description: "Reach 100-8t 1.4.1.4"
```

Creating and Configuring VLANs for the ReachNXT Upgrade

If the ReachNXT 100-8t and the upgrade servers are on the same VLAN, follow the procedure in [“ReachNXT 100-8t and Upgrade Server on the Same VLAN”](#) below. If the ReachNXT 100-8t and the upgrade servers are on different VLANs, follow the procedure in [“ReachNXT 100-8t and Upgrade Server on Different VLANs”](#) on page 20.

ReachNXT 100-8t and Upgrade Server on the Same VLAN

If the ReachNXT 100-8t and the upgrade servers are on the same VLAN, do the following to create and configure a VLAN for the upgrade.

- 1 Create the VLAN and name it ReachMgmt. For example:

```
# create vlan ReachMgmt
```



NOTE

The name of the upgrade VLAN must be ReachMgmt.

- 2 Assign a VLAN tag to be used for the upgrade. For example:
configure vlan ReachMgmt tag 20
- 3 Add each port number to which a ReachNXT 100-8t is connected. These ports must be added as tagged ports. For example:
configure vlan ReachMgmt add ports 25 tagged
- 4 Add the port to which the upgrade DHCP/BootP server and TFTP server are connected. This can be tagged or untagged, depending on the server’s capability. For example:
configure vlan default delete ports 26
configure vlan ReachMgmt add ports 26 untagged
- 5 Configure an IP address for the ReachNXT upgrade VLAN. For example:
configure vlan ReachMgmt ipaddress 10.10.10.1 255.255.255.0

- 6 Configure VLAN Name TLV advertisement for each port to which a ReachNXT 100-8t is connected. (LLDP should already be enabled.) For example:

```
# configure lldp port 25 advertise vendor-specific dot1 vlan-name vlan ReachMgmt
```

ReachNXT 100-8t and Upgrade Server on Different VLANs

If the ReachNXT 100-8t and the upgrade server are on different VLANs, do the following to create and configure two VLANs for the upgrade.

- 1 Create a VLAN for the ReachNXT 100-8t and name the VLAN ReachMgmt. For example:

```
# create vlan ReachMgmt
```



NOTE

The upgrade VLAN must be named ReachMgmt.

- 2 Assign a VLAN tag. This VLAN tag will be used for the upgrade. For example:
configure vlan ReachMgmt tag 20
- 3 Add the port(s) to which ReachNXT 100-8t units are connected. These ports must be added as tagged ports. For example:
configure vlan ReachMgmt add ports 25 tagged
- 4 Configure an IP address for the ReachNXT 100-8t VLAN. For example:
configure vlan ReachMgmt ipaddress 10.10.1.1 255.255.255.0
- 5 Enable IP forwarding for the ReachNXT 100-8t VLAN. For example:
enable ipforwarding vlan ReachMgmt
- 6 Create a VLAN for access to the DHCP/BootP and TFTP servers. For example:
create vlan server_vlan
- 7 Add one or more ports to which the servers are connected. These ports can be tagged or untagged, depending on the server's capability. For example:
configure vlan default delete ports 26
configure vlan server_vlan add ports 26 untagged
- 8 Configure an IP address for the upgrade VLAN. For example:
configure vlan server_vlan ipaddress 10.10.10.1 255.255.255.0
enable ipforwarding vlan server_vlan
- 9 Enable the BootP Relay function and add the DHCP/BootP server IP address. For example:
configure bootprelay add 10.10.10.2 vr VR-Default
enable bootprelay vr VR-Default
- 10 Set a proxy ARP entry for the TFTP server. (The ReachNXT 100-8t does not have a gateway route and does not support the DHCP router option.) For example:
configure iparp add proxy 10.10.10.2 255.255.255.255 vr VR-Default
- 11 Configure VLAN Name TLV advertisement for the port(s) to which the ReachNXT 100-8t units are connected. (LLDP should already be enabled.) For example:
configure lldp port 25 advertise vendor-specific dot1 vlan-name vlan ReachMgmt

Configuring the DHCP/BootP Server

To configure the DHCP/BootP server:

- 1 Configure the DHCP/BootP server with an IP address on the same subnet as the ReachNXT upgrade VLAN configured on the ExtremeXOS switch.
- 2 Download the ReachNXT firmware image file from the Extreme Networks website, and move it to the `/tftpboot` directory of the TFTP server that will be used to distribute the file.

The image file is named according to the following format: `Reach_100_8t_w.x.y.z.bin`, where `w.x.y.z` is the firmware version. The image file keep the with same name when it is downloaded to the server, but can be renamed if necessary, as long as the name is 47 characters or fewer.

- 3 Configure the server for the ReachNXT upgrade VLAN as follows:
 - a Configure a range of IP addresses to be assigned for the ReachNXT 100-8t units to use for the upgrade.
 - b Configure a server IP address, the IP address of the TFTP server use to get the firmware image file
 - c Configure the `filename` option to specify the name of the firmware image file as it is stored in the `/tftpboot` directory on the TFTP server.

The following is a sample `dhcp.conf` entry for this example:

```
subnet 10.10.10.0 netmask 255.255.255.0 {
    range dynamic-bootp 10.10.10.128 10.10.10.254;
    default-lease-time 21600;
    max-lease-time 43200;
    next-server 10.10.10.2;
    filename "Reach_100_8t_1.6.1.6.bin";
}
```

Triggering the Upgrade on the ReachNXT 100-8t

The following events trigger a firmware upgrade on the ReachNXT 100-8t.

- Initial connection and power-up

If LLDP is enabled on the ExtremeXOS switch, the DHCP server is configured, and the TFTP server has the firmware image file, the firmware will be upgraded when the ReachNXT 100-8t is connected and initializes.
- Resetting inline power

If the ReachNXT 100-8t has already been connected and is powered by the ExtremeXOS switch, reset it from the ExtremeXOS switch. For example:

```
# reset inline-power ports 10:48
```
- Disabling and enabling the ExtremeXOS switch port

If the ReachNXT 100-8t has already been connected, disable and re-enable the port to trigger the ReachNXT 100-8t to initiate the upgrade. For example:

```
# disable port 25
# enable port 25
```

Verifying the Upgrade

After the firmware has been upgraded, use the **show lldp neighbors detailed** CLI command to verify that the new firmware version is installed.

```
# show lldp neighbors detailed
```

```
-----  
LLDP Port 25 detected 1 neighbor  
Neighbor: 00:04:96:1F:A8:00/9, age 19 seconds  
- Chassis ID type: MAC address (4)  
  Chassis ID      : 00:04:96:1F:A8:00  
- Port ID type: ifName (5)  
  Port ID        : "9"  
- Time To Live: 120 seconds  
- System Name: "Reach 100-8t 800284-00-01 0840G-00560"  
- System Description: "Reach 100-8t 1.6.1.6"
```

4 Troubleshooting

This chapter describes techniques for troubleshooting the installation of the ReachNXT 100-8t port extender. It includes the following sections:

- [Checking LLDP Status on page 23](#)
- [Checking Power over Ethernet Status on page 23](#)
- [Viewing EMS Messages on page 24](#)

Checking LLDP Status

The ReachNXT 100-8t uses LLDP to communicate with the uplinked ExtremeXOS switch. It operates only when it detects an ExtremeXOS switch connected to its uplink port via LLDP. The ReachNXT 100-8t sends LLDP Data Units (LLDPDUs) to the uplinked switch every 30 seconds, with a time to last (TTL) of 120 seconds. The LLDPDUs contain TLVs for Chassis ID, Port ID, TTL, System Name, and System Description.

LLDP must be enabled on the uplinked ExtremeXOS switch. On the switch, you can use the **show lldp neighbors** command to get information about the downlinked ReachNXT 100-8t. The information received from the ReachNXT 100-8t is similar to the following:

```
Slot-1 Stack.27 # show lldp neighbors detailed
-----
LLDP Port 4:1 detected 1 neighbor
  Neighbor: 00:04:96:1F:A8:00/9, age 29 seconds
    - Chassis ID type: MAC address (4)
      Chassis ID      : 00:04:96:1F:A8:00
    - Port ID type: ifName (5)
      Port ID        : "9"
    - Time To Live: 120 seconds
    - System Name: "Reach 100-8t 800284-00-01 0840G-00560"
    - System Description: "Reach 100-8t 1.6.1.6"
```

The System Name TLV includes the serial number of the ReachNXT 100-8t unit. The System Description TLV includes the firmware version running on the ReachNXT 100-8t.

Checking Power over Ethernet Status

When the ReachNXT 100-8t is connected to the ExtremeXOS switch using the Gigabit uplink port (port 9), it can be powered through Power over Ethernet (PoE) supplied by the uplinked ExtremeXOS switch. On the ExtremeXOS switch, PoE must be enabled for the port that is connected to the ReachNXT 100-8t.

To check the PoE status for a slot on an ExtremeXOS switch, use the **show inline-power** command. For example:

```
BD-8810.1 # show inline-power slot 10
```

Slot	Inline-Power	Firmware Status	Budgeted Power (Watts)	Measured Power (Watts)	Legacy
10	Enabled	Operational	50 W	6 W	Disabled

To show detailed PoE information for a specific port, use the CLI command **show inline-power info detail**. For example:

```
BD-8810.3 # show inline-power info detail ports 10:48
```

```
Port 10:48
Configured Admin State: enabled
Inline Power State      : delivering
MIB Detect Status       : delivering
Label                   :
Operator Limit          : 15400 milliwatts
PD Class                : class0
Max Allowed Power       : 15.400 W
Measured Power          : 6.400 W
Line Voltage            : 48.0 Volts
Current                 : 132 mA
Fault Status            : None
Detailed Status         : valid resistor detected, 802.3a
Priority                 : low
```

Viewing EMS Messages

The ExtremeXOS Error Message System (EMS) includes messages specific to the ReachNXT 100-8t. Two of these messages, `lldp.ReachDtect` and `lldp.ReachRem`, are visible in the system log by default, since they are LLDP Informational messages, and LLDP has a report level of Informational by default.

Sample `lldp.ReachDtect` message:

```
09/18/2008 16:12:57.97 <Info:lldp.ReachDtect> Reach device detect for port 32, mac
00:04:96:1F:A8:03
```

Sample `lldp.ReachRem` message:

```
09/18/2008 16:12:45.44 <Info:lldp.ReachRem> Reach device remove for port 32, mac
00:04:96:1F:A8:03
```

The following message is reported by default when more than one Reach port extenders are detected as connected to a port on the ExtremeXOS switch; the ExtremeXOS-based upgrade is supported only for one directly attached Reach port extenders per port of the ExtremeXOS switch.

```
10/02/2008 19:09:34.07 <Noti:HAL.Reach.DtectLmt> More than one Reach device has been
detected on port 32.
```


**WARNING!**

Read the following safety information thoroughly before installing Extreme Networks products. Failure to follow this safety information can lead to personal injury or damage to the equipment.

Only trained service personnel should perform service to Extreme Networks switches and their components. Trained service personnel have read all related installation manuals, have the technical training and experience necessary to be aware of the hazards to which they are exposed in performing a task, and are aware of measures to minimize the danger to themselves or other persons.

This appendix includes the following sections:

- [Considerations Before Installing on page 25](#)
- [Maintenance Safety on page 26](#)
- [Cable Routing for LAN Systems on page 26](#)
- [Selecting Power Supply Cords on page 27](#)
- [Fiber Optic Ports—Optical Safety on page 27](#)

Considerations Before Installing

Consider the following items before installing equipment.

- The system is designed to operate in a typical environmentally controlled office environment. Choose an indoor area that has the following characteristics:
 - Temperature- and humidity-controlled, such that the maximum ambient room temperature shall not exceed 40°C (104°F)
 - Clean and free from airborne materials that can conduct electricity
 - Well ventilated and away from sources of heat including direct sunlight
 - Away from sources of vibration or physical shock
 - Isolated from strong electromagnetic fields produced by electrical devices

Maintenance Safety

When you perform maintenance procedures on Extreme Networks equipment, follow these recommendations:

- Use only original accessories and/or components approved for use with this system. Failure to follow these instructions may damage the equipment or violate required safety and EMC regulations.
- The chassis cover should only be removed by Extreme Networks personnel. There are no customer serviceable components in this system. Repairs to the system must be performed by an Extreme Networks factory service technician.
- Install all cables in a manner that avoids strain. Use tie wraps or other strain relief devices.

Cable Routing for LAN Systems

The Extreme Networks switches meet the requirements for LAN system equipment. LAN systems are designed only for intra-building installations; that is, cable runs between devices must be in the same building as the connected units.

This equipment can be connected between buildings if any one of the following conditions is true:

- Cable runs between buildings are less than 140 feet long.
- Cable runs between buildings are directly buried.
- Cable runs between buildings are in an underground conduit, where a continuous metallic cable shield or a continuous metallic conduit containing the cable is bonded to each building grounding electrode system.



CAUTION

Failure to follow these requirements for cable routing conditions may expose the user to electrical shock and expose the unit to errors or damage.



WARNING!

The intra-building ports of the equipment or subassembly is suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly MUST NOT be metalically connected to interfaces that connect to the outside plant (OSP) or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 4) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metalically to OSP wiring.

PoE Devices

When connecting power over Ethernet (PoE) devices to a PoE switch, all connections between the PoE device and the switch must remain inside the same building and use a low-voltage power distribution system per IEEE 802.3af.

Selecting Power Supply Cords

Extreme Networks provides power adapters shipped with the product for use in the US and Canada.

The power adapter has several wall plug configurations and an option to use a two-prong power cord. If a cord is desired, select a power supply cord that meets the following requirements:

- Rated: 0.5 A minimum
- Wall plug: Suitable for use in country of installation and approved by local regulatory authority

Fiber Optic Ports—Optical Safety

The following safety warnings apply to all optical devices used in Extreme Networks equipment that are removable or directly installed in an I/O module or chassis system. Such devices include but are not limited to gigabit interface converters (GBICs), small form factor pluggable (SFP) modules (or mini-GBICs), XENPAK transceivers, and XFP laser optic modules.



WARNING!

Laser optic modules become very hot after prolonged use. Be careful when removing a laser optic module from the chassis or option card. If the laser optic module is too hot to touch, disengage the laser optic module and allow it to cool before removing it completely.



WARNING!

When working with laser optic modules, always take the following precautions to avoid exposure to hazardous radiation.

- *Never look at the transmit LED/laser through a magnifying device while it is powered on.*
- *Never look directly at a fiber port on the switch or at the ends of a fiber cable when they are powered on.*
- *Invisible laser radiation can occur when the connectors are open. Avoid direct eye exposure to the beam when optical connections are unplugged.*
- *Never alter, modify, or change an optical device in any way other than suggested in this document.*

SFP (Mini-GBIC), XENPAK, and XFP Regulatory Compliance

Extreme Networks pluggable optical modules meet the following regulatory requirements:

- Class 1 Laser Product
- EN60825-1+A2:2001 or later, European laser standard
- FCC 21 CFR Chapter 1, Subchapter J in accordance with FDA & CDRH requirements
- Application of CE Mark in accordance with 89/336/EEC EMC and 73/23/EEC Low Voltage Directives
- UL and/or CSA registered component for North America
- 47 CFR Part 15, Class A when installed into Extreme products



NOTE

Extreme Networks optical modules are tested to work in all supported Extreme Networks switches. We recommend that all customers use Extreme Networks optical modules in their Extreme Networks switches. Extreme Networks assumes no liability for third-party optical modules. Although Extreme Networks does not block third-party optical modules, we cannot ensure that all third-party optical modules operate properly in all Extreme Networks switches. The customer assumes all risks associated with using third-party optical modules in Extreme Networks switches.

Sicherheitshinweise



WARNUNG!

Vor der Installation der Produkte von Extreme Networks sind die nachfolgenden Sicherheitshinweise aufmerksam zu lesen. Die Nichtbeachtung dieser Sicherheitshinweise kann zu Verletzungen oder Schäden an der Ausrüstung führen.

Installation, Wartung und Ausbau eines Switch, einer Grundplatte oder einer seiner Komponenten dürfen nur von geschultem und qualifiziertem Servicepersonal durchgeführt werden! Geschulte und qualifizierte Servicetechniker verfügen über die erforderliche technische Ausbildung und Erfahrung, um mögliche Gefahren bei der Durchführung von Servicearbeiten zu erkennen und Maßnahmen zur Minimierung der Gefahr für sich bzw. andere zu treffen.

Hinweise zur Installation



WARNUNG!

Beachten Sie vor der Installation der Ausrüstung folgende Punkte.

Stellen Sie sicher, dass die nachfolgend aufgeführten Bedingungen erfüllt sind:

- Das System ist für den Einsatz in einer typischen Umgebung gemäß Telco-Vorgaben vorgesehen. Wählen Sie einen Aufstellort mit den folgenden Eigenschaften:
 - Innenbereich mit Temperatur- und Feuchtigkeitsregelung, wobei die maximale Raumtemperatur 40°C (104°F) nicht überschreiten darf.
 - Sauber und frei von elektrisch aufladbaren Teilchen in der Luft.
 - Ausreichende Belüftung und Abstand zu Wärmequellen, einschließlich direktem Sonnenlicht
 - Ausreichender Abstand zu Quellen, die Erschütterungen oder Schläge/Stöße hervorrufen können
 - Isolierung von starken elektromagnetischen Feldern, wie sie durch Elektrogeräte erzeugt werden
 - Sicherer, abgeschlossener Arbeitsbereich mit beschränktem Zugang, sodass nur geschultes und qualifiziertes Servicepersonal Zugriff auf das Gerät hat
 - Die Ausrüstung im unteren Teil des Gestells installieren, um zu vermeiden, dass der obere Teil des Gestells zu schwer wird.
- In für elektrische Stürme anfälligen Gebieten wird empfohlen, das System an einen Spannungsstoßunterdrücker anzuschließen.
- Auf allen Seiten für mindestens 7,5 cm (3") Abstand sorgen, um eine ausreichende Belüftung zu gewährleisten. Die Lufteinlassöffnung an den vorderen, seitlichen und hinteren Entlüftungsgittern nicht blockieren. Das System nicht in der Nähe von Wärmequellen aufstellen.
- Sicherstellen, dass die Ausrüstung in einem Bereich aufgestellt wird, der den Spezifikationen für Leistungsaufnahme und Wärmeabstrahlung der Komponenten entspricht.
- Sicherstellen, dass Ihre Netzteile die Anforderungen an die Strom- oder Wechselstromversorgung vor Ort für alle Netzwerkgeräte erfüllen.
- Bei den Extreme-Produkten handelt es sich um digitale Geräte der Klasse A gemäß Teil 15 der FCC-Richtlinien und anderen internationalen Richtlinien. Der Gerätebetrieb unterliegt den folgenden Voraussetzungen: (1) Das Gerät kann schädliche Interferenzen verursachen, und (2) das Gerät muss jede empfangene Interferenz zulassen, einschließlich einer Interferenz, die einen unerwünschten Betrieb verursachen kann.

Installation von Netzteilen



WARNUNG!

Bei der Installation sämtlicher Netzteile von Extreme Networks muss sichergestellt werden, dass die nachfolgend aufgeführten Anforderungen erfüllt sind. Angaben zu Nennleistung und Leistungsbedarf finden sich in den Installationsanweisungen für das jeweilige Netzteil (Power Supply Unit, PSU).

Folgende Anforderungen müssen unbedingt erfüllt sein:

- Wenn der mit Wechsel- oder Gleichstrom betriebene Switch von Extreme Networks mit einem externen grünen/gelben Erdungskabel ausgestattet ist, dann muss zunächst dieses Erdungskabel zwischen der Grundplatte und einem geeigneten Erdungspunkt angeschlossen werden, bevor andere Verbindungen zum Gerät hergestellt werden; dies gilt auch für den Anschluss an das Wechsel- bzw. Gleichstromnetz. Beim Ausbau des Geräts aus dem Gestell muss das Erdungskabel als letztes getrennt werden.
- Netzteile nur an vorschriftsmäßig geerdete Steckdosen anschließen, um die Gefahr elektrischer Schläge zu vermeiden und die Konformität mit internationalen Sicherheitsnormen zu gewährleisten.
- Nur Stromkabel verwenden, die für den Einsatz in dem jeweiligen Land zugelassen sind. Wechselstromkabel dürfen nicht manipuliert werden.
- Die Wandsteckdose muss in der Nähe der Anlage installiert und leicht zugänglich sein, um eine schnelle Trennung vom Netz zu ermöglichen.
- Spannung und Frequenz der Steckdose müssen den elektrischen Nenndaten des Systems entsprechen. Das Gebäude bzw. die Stromquelle muss mit einem Überlastschutz ausgestattet sein.
- Einen Spannungsstoßunterdrücker, einen Netzfilter oder eine unterbrechungsfreie Stromversorgung verwenden, um das System vor einer vorübergehenden Zu- oder Abnahme der elektrischen Leistung zu schützen.
- Bei laufendem Betrieb austauschbare Netzteile: Das Netzteil vorsichtig, nicht mit Kraft in das Aufnahmefach einsetzen.
- Bei Einsatz mehrerer Netzteile in einem Switch sind die Netzteile jeweils an unterschiedliche, unabhängige Stromquellen anzuschließen. Auf diese Weise ist bei einem Ausfall einer einzelnen Stromquelle nur das daran angeschlossene Netzteil betroffen. Wenn alle Netzteile eines einzelnen Switch an dieselbe Stromquelle angeschlossen sind, ist der gesamte Switch für einen Ausfall der Stromversorgung anfällig.

Leistungsspezifikationen für Netzteile von Extreme Networks finden sich in Anhang B dieses Dokuments oder im Netzteil-Datenblatt unter <http://www.extremenetworks.com>.

Wartungssicherheit

Folgende Vorsichtsmaßnahmen müssen getroffen werden:

- Nur für den Einsatz mit diesem System zugelassene Originalzubehörteile bzw. -komponenten verwenden. Die Nichtbeachtung dieser Anweisungen kann zu Schäden an der Ausrüstung oder sogar zu einem Verstoß gegen die erforderlichen Sicherheitsbestimmungen und EMV-Vorschriften führen.
- Die Abdeckung der Grundplatte darf nur durch Personal von Extreme Networks entfernt werden. Das System enthält keine vom Kunden zu wartenden Komponenten. Reparaturen am System sind von einem Werkstechniker von Extreme Networks durchzuführen.

- Der An-/Aus-Schalter des Systems darf nicht die gesamte Stromversorgung zum System unterbrechen. Zur Unterbrechung der Wechselstromversorgung zum System müssen alle Stromkabel aus den Wandsteckdosen gezogen werden. Das Stromkabel dient zur Trennung von der Netzstromversorgung.
- Vor dem Entfernen der Rückwand eines Extreme Networks-Switch muss die gesamte Stromzufuhr unterbrochen werden.
- Vor der Aufnahme von Arbeiten in der Nähe von Stromquellen alle Stromkabel abziehen, sofern nicht im Rahmen eines Wartungsverfahrens anders vorgegeben.
- Beim Umgang mit Modulen, optischen Geräten, Netzteilen oder anderen modularen Zubehörteilen das ESD-Schutzarmband anlegen, um das Risiko einer Beschädigung der Geräte durch elektrostatische Entladungen zu verringern. Das Armband zum Schutz elektrostatisch gefährdeter Bauteile (ESB) grundsätzlich an der Grundplatte befestigt lassen, damit es beim Umgang mit diesen Bauteilen immer zur Hand ist.
- Alle Kabel so verlegen, dass übermäßige Belastungen vermieden werden. Kabelbinder oder Zugentlastungsklemmen verwenden.
- Ein Stromkabel bei Anzeichen von Beschädigungen unverzüglich austauschen.

Allgemeine Sicherheitsvorkehrungen

Folgende Richtlinien sind unbedingt zu befolgen:

- Keine Gegenstände heben, die möglicherweise zu schwer sind.
- Bei einer Installation in einem Gestell darauf achten, dass schwere Geräte unten im Gestell eingebaut werden, um Gefahren durch Umkippen zu vermeiden.
- Bei Summit Desktop-Switches keinen Monitor oder andere Gegenstände auf die Anlage stellen. Die Abdeckung der Grundplatte ist nicht darauf ausgelegt, Gewicht zu tragen.
- Nur Werkzeuge und Ausrüstung verwenden, die sich in einwandfreiem Zustand befinden. Keine Ausrüstung verwenden, die sichtbare Beschädigungen aufweist.
- Verlegen von Kabeln: Kabel so verlegen, dass keine Schäden entstehen oder Unfälle, z. B. durch Stolpern, verursacht werden können.

Auswahl der Stromkabel

Je nachdem, welchen Switch Sie erworben haben, werden die Wechselstromnetzteile von Extreme Networks entweder nur mit einem 110-VAC-Kabel oder mit einem 110-VAC-Kabel und einem 208/220-VAC-Kabel geliefert. Die von Extreme Networks gelieferten Stromkabel sind nur für den Einsatz in den Vereinigten Staaten und Kanada ausgelegt und zugelassen. Stromkabel für den Einsatz außerhalb der Vereinigten Staaten und Kanada werden normalerweise von einem Drittanbieter geliefert und müssen die folgenden Anforderungen erfüllen:

- Die Stromkabel müssen offiziell für das Land zugelassen sein, in dem sie verwendet werden sollen.
- Die Stromkabel müssen mit einem für das Einsatzland zugelassenen Wandsteckkontakt mit der geeigneten Nennleistung ausgerüstet sein.
- Die Konfiguration der Steckvorrichtung (die Steckverbindung zur Einheit, nicht zur Wandsteckdose) muss für eine Gerätesteckdose gemäß EN60320/IEC320-C14 ausgeführt sein.
- Die Länge der Stromkabel muss weniger als 5 m (15 Fuß) betragen.
- Die Mindestspezifikation für das flexible Kabel lautet:

- Nr. 18 AWG (0,823 mm²) für Einheiten mit einem Bemessungsstrom von weniger als 10 A, oder
- Nr. 18 AWG (0,823 mm²) bis 2 m Länge für Einheiten mit einem Bemessungsstrom von 10 A oder höher, oder
- Nr. 16 AWG (1,0 mm²) bis 5 m Länge für Einheiten mit einem Bemessungsstrom von 10 A oder höher
- Bei allen Kabeln muss es sich um 3-adrige Kupferleiter vom Typ SVT oder SJT, HAR oder einen äquivalenten Typ handeln.

Verwenden Sie immer ein Wechselstromkabel, das den Vorschriften Ihres Landes entspricht. Erkundigen Sie sich über die örtlichen Vorschriften für Elektroinstallationen und fragen Sie bei den zuständigen Aufsichtsbehörden nach den Anforderungen an Stromkabel. Nähere Angaben zu den Leistungsspezifikationen von Netzteilen finden sich unter <http://www.extremenetworks.com> oder in Anhang B dieses Dokuments.

Lichtleiteranschlüsse: Optische Sicherheit



WARNUNG!

Beim Umgang mit Lichtleitermodulen sind folgende Vorsichtsmaßnahmen zu beachten:

- *Niemals durch ein Vergrößerungsgerät auf die übertragende LED/den Laser schauen, wenn diese(r) eingeschaltet ist.*
- *Niemals direkt auf einen Lichtleiteranschluss am Switch oder auf die Enden eines Faserkabels schauen, wenn diese eingeschaltet sind.*
- *Bei offenen Anschlüssen kann es zu unsichtbarer Laserstrahlung kommen. Direkter Augenkontakt mit dem Strahl ist zu vermeiden.*
- *Ein optisches Gerät niemals auf andere Weise verändern oder modifizieren als in diesem Dokument angegeben.*

Einhaltung behördlicher Vorschriften durch SFP (Mini-GBIC), XENPAK und XFP

- Laserprodukt der Klasse 1
- EN60825-1+A2:2001 oder jünger, Europäische Richtlinie für Lasersysteme
- Anwendung der CE-Kennzeichnung gemäß der Richtlinien 89/336/EWG EMV und 73/23/EWG für Niederspannungsgeräte

B Technical Specifications

This appendix provides technical specifications for the ReachNXT 100-8t port extender and related components:

Table 3: ReachNXT 100-8t Technical Specifications

Physical Dimensions	Height: 1.34 inches (3.4 cm) Width: 8.66 inches (22 cm) Depth: 5.89 inches (15 cm)
Weight	1.1 lb (0.5 kg)
Packaged Dimensions	Height: 2.63 inches (6.68 cm) Width: 14 inches (35.56 cm) Depth: 7.25 inches (18.42 cm)
Packaged Weight	2 lb (0.91 kg)
Power Specifications	
Optional AC power adapter	Manufacturer: Leader Electronics, Inc. Model number: IU18-2120125-WP Nominal Input Ratings: 100 – 240V, 50/60Hz Nominal Input Current: 0.5A Nominal Output Ratings: 12V Nominal Output Current: 1.25A
Power dissipation	Powered by AC adapter: 7 W Powered by PoE: 8.5 W
Acoustic sound	Noise: none (unit has no fan)
Safety Standards	
North America	UL 60950-1, Listed Accessory cULus Listed Accessory, Equivalent to CAN/CSA-C22.2 No. 60950-1-00 (Canadian Safety of ITE)
Europe	Low Voltage Directive (LVD) TUV GS Mark (German Notified Body) EN60950-1:2001 (European Safety of ITE)
International	CB Report & Certificate per IEC 60950-1:2001 Country Deviations
Country-specific	NOM/NYCE, Product Safety & EMC Approval (Mexico) AS/NZS 3260, ACA DoC, Safety of ITE (Australia/New Zealand)
Laser Safety Standards (SFP Modules Only)	
North America	FCC 21 CFR subpart (J) (Safety of Laser Products) CDRH Letter of Approval (US FDA Approval)
Europe	EN60825-1:+A2:2001 (European Safety of Lasers)
EMI/EMC Standards	
North America EMC for ITE	FCC CFR 47 part 15 Class B (USA) ICES-003 Class B (Canada)

Table 3: ReachNXT 100-8t Technical Specifications (continued)

European EMC standards	EN 55022: 2006 Class B EN 55024 A2:2003 EN61000-3-2 8-2006 (Harmonics) EN61000-3-3 1995+A2:2005 (Flicker) 2004/108/EC EMC Directive
International EMC certifications	CISPR 22:2006 Ed 5.2, Class B (International Emissions) CISPR 24 A2:2003 (International Immunity) IEC/EN 61000-4-2 Electrostatic Discharge IEC/EN 61000-4-3 Radiated Immunity 10V/m, Criteria A IEC/EN 61000-4-4 Transient Burst IEC/EN 61000-4-5 Surge IEC/EN 61000-4-6 Conducted Immunity IEC/EN 61000-4-11 Power Dips & Interruptions
Country-specific	VCCI Class B (Japan Emissions) ACMA (C-Tick) via CISPR 22:2006 (Australia & New Zealand) CNS 13438:1997 Class B (BSMI-Taiwan) KCC Mark, KN22, KN24, Class B (North Korea) NOM/NYCE, Product Safety & EMC Approval (Mexico) CCC (China)
Telecom Standards	ETSI EN 300 386:2001 (EMC Telecommunications) ETSI EN 300 019 (Environmental for Telecommunications) IEEE 802.3 Media Access Standards IEEE 802.3ab 1000BASE-T IEEE 802.3af PoE/PD IEEE 802.3z 1000BASE-X IEEE 802.1AB – LLDP Link Layer Discovery Protocol
Environmental Data	
Environmental Standards	EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational EN/ETSI 300 753 (1997-10) - Acoustic Noise ASTM D3580 Random Vibration Unpackaged 1.5G
Operating conditions	Temperature range: 0° C to 40° C (32° F to 104° F) Relative Humidity: 10 - 93% Altitude: 0 to 3,000 meters (9,850 feet) Shock (half sine): 30 m/s ² (3 g), 11 ms, 60 shocks Office Vibration (In Rack): 5-100-5 Hz @ 2/10g, 0-Peak, 1 Oct./min. Random Vibration: 3-500 Hz @ 1.5g rms
Storage & transportation conditions (packaged)	Temperature: -40° C to 70° C (-40° F to 158° F) Relative Humidity: 10 - 90% Packaged shock (half sine): 180 m/s ² (18 g), 6 ms, 600 shocks, (package < 50kg) Packaged random vibration: 5 to 20 Hz @ 1.0 ASD w/-3 dB/oct. from 20 to 200 Hz 14 drops minimum on sides & corners @ 39.4" (<15 kg box)

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